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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/649,190	08/28/2000	Paul V. Cooper	23438.00023	7535

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EXAMINER

KASTLER, SCOTT R

ART UNIT	PAPER NUMBER
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1742

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DATE MAILED: 01/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/649,190

Applicant(s)

COOPER, PAUL V.

Examiner

Scott Kastler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Election/Restrictions

In view of applicant's traversal, mailed 10-24-2001 and received on 1-9-2002, of the restriction requirement mailed on 9-24-2001, the restriction requirement has been withdrawn and an action on the merits with respect to all instant claims 1-30 follows.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, 11, 13, 14, 19, 21, 23 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Dube. Dube teaches a device including an impeller (20) with three blades (20a) including portions angled at a 45 degree angle for direction metal downwardly, a drive shaft (18) and a drive source (16) showing all aspects of the above claims, since the use of the claimed apparatus (for scrap melting) cannot be relied upon to fairly further limit claims to the apparatus itself. See *In re Casey*, 152 USPQ 235.

Claims 1, 5, 6, 11, 12, 13, 18, 19, 21, 23 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Cooper'899. Cooper'899 teaches a scrap metal melting device including an impeller (11) connected to a drive shaft (23) connected to a drive source (55) where each of the three impeller blades include an angled portion for directing molten metal downwardly (13) and a portion which directs molten metal outwardly (33) thereby showing all aspects of the above claims.

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Claims 1, 5, 6, 11, 12, 13, 18, 19, 21, 23 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Cooper'986. Cooper'986 teaches a scrap metal melting device including an impeller (35) connected to a drive shaft (23) connected to a drive source (61) where each of the three impeller blades include an angled portion for directing molten metal downwardly (49) and a portion which directs molten metal outwardly (57) thereby showing all aspects of the above claims.

Claims 19 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Cooper'807. Cooper'807 teaches a scrap metal melting device including an impeller (200) connected to a drive shaft (20) which is in turn connected to a drive source, thereby showing all aspects of the above claims.

Claims 19, 26, 27 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Gilbert et al'863. Gilbert et al'863 teaches a molten metal impeller device including an impeller (40) connected to a shaft (30) for generating a flow of molten metal, where the impeller includes four blades in the shape of a cross, thereby showing all aspects of the above claims.

Claims 1, 5, 6, 11, 13, 14, 19, 21, 23 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Cooper'045. Cooper'045 teaches a scrap metal melting device including an impeller (162 for example) with blades including an angled portion (161) which directs molten metal downwardly, and a portion (160) which directs molten metal outwardly, connected to a drive shaft (200) connected to a drive source (300) showing all aspects of the above claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 5, 6, 11, 13, 14, 19, 20, 21, 23, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper'045 in view of Russian'312. As applied to claim 1 above, Cooper'045 shows all aspects of the above claims, including a connection of the impeller to the drive shaft including both a tapered section of the shaft and impeller (107 and 201 in figure 5 for example) and a threaded portion of the drive shaft (202), (see also col. 4, lines 7-20 for example), thereby showing all aspects of the above claims except the location of the threaded portion below the impeller and a nut applied to the threaded portion in order to connect the drive shaft to the impeller, although the threaded portion of Cooper'045 operates in substantially the same manner (forcing the impeller into contact with the drive shaft while not being subject to any significant torque itself) for substantially the same purpose (connecting the impeller to the drive shaft). Russian'312 teaches that it is well known in the molten metal impeller art to employ a nut fastener at the end of a drive shaft to attach an impeller (3) to a drive shaft where the nut and threaded end of the drive shaft is located below the impeller, where the nut would serve to force the impeller into contact with the drive shaft without imparting significant torque to the nut itself. Because one of ordinary skill in the art at the time the invention was made would have recognized the advantages of placing the threaded portion below the impeller as taught by Russian'312, namely, less complicated machining of the impeller and easier access to the

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threaded section when impeller replacement is required, motivation to place the threaded portion of the drive shaft of Cooper'045, below the impeller and held by a nut in contact with the drive shaft, as taught by Russian'312, would have been a modification obvious to one of ordinary skill in the art at the time the invention was made.

Claims 2, 15, 22 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over each of Cooper'899, Cooper'986 or Cooper'045. As applied to claim 1 above, each of Cooper'899, Cooper'986 and Cooper'045 show all aspects of the above claims except to specifically recite that the impeller have four blades, although each of the above references operate in substantially the same manner for substantially the same purpose as instantly claimed. It has been well settled that motivation to increase the numbers of a component shown by the prior art (in this case the number of impeller blades) in order to increase the effect of the component would have been a modification obvious to one of ordinary skill in the art at the time the invention was made. See *In re Harza*, 127 USPQ 378. The subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because one of ordinary skill in the molten metal impeller art would have found it an obvious modification to increase the numbers of impeller blades in any of Cooper'899, Cooper'986 or Cooper'045 to four, or more, in order to increase the amount of surface area which serves to direct the molten metal.

Claims 7-9, 16, 17, 24, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of Cooper'899, Cooper'986 or Cooper'045, as applied to claims 1 and 2 above. Each of Cooper'899, Cooper'986 or Cooper'045 show all aspects of the above claims except to specifically teach the instantly recited impeller component sizes. However, it has been

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well settled that absent any showing that it is critical, motivation to modify the size of an article (the impeller blade components) is a modification that would have been obvious to one of ordinary skill in the art at the time the invention was made. See *In re Rose*, 105 USPQ 237. The subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the impeller components of each of Cooper'899, Cooper'986 or Cooper'045 operate in substantially the same manner for substantially the same purpose as that of the instant claims, and motivation to employ impeller components of any particular size, absent any showing that the size of the components is critical, in the impellers of each of Cooper'899, Cooper'986 or Cooper'045 would have been a modification obvious to one of ordinary skill in the art at the time the invention was made.

Claims 10, 14 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of Cooper'899, Cooper'986 or Cooper'045 as applied to claims 1 or 2 above. Each of Cooper'899, Cooper'986 or Cooper'045, as applied to claims 1 and 2 above show all aspects of the above claims except to specifically recite the instantly claimed impeller configurations, although the impellers of each of Cooper'899, Cooper'986 or Cooper'045 operate in substantially the same manner for the same purpose as instantly claimed. It has been well settled that absent any demonstrated new or unexpected results arising therefrom, motivation to alter the configuration of a component shown by the applied prior art without materially altering the function of said component, would have been a modification obvious to one of ordinary skill in the art at the time the invention was made. See *In re Dailey*, 149 USPQ 47. In the instant case, the subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because one of ordinary skill in the molten metal impeller art would

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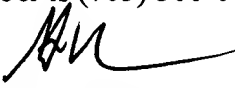
have found it an obvious modification to alter the shapes or configurations of the impeller blades of any of Cooper'899, Cooper'986 or Cooper'045 to any desired configuration, including those instantly claimed, as long as the impeller functions in the manner required by Cooper'899, Cooper'986 or Cooper'045.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Kastler whose telephone number is (703) 308-2506. The examiner can normally be reached on Monday through Friday.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.


Scott Kastler
Primary Examiner
Art Unit 1742

sk
January 25, 2002